

said phase-shifting mask being utilized in conjunction with off-axis illumination such that radiation traverses said mask and impinges on said material.

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16. A computer program product for controlling a computer comprising a recording medium readable by the computer, means recorded on the recording medium for directing the computer to generate at least one file corresponding to a phase shifting mask capable of transferring an image, including 0th diffraction order and $\pm 1^{\text{st}}$ diffraction orders, onto a material, said generation of said file comprising the step of:

generating a phase-shifting mask comprising at least one feature, wherein said at least one feature includes halftoned, phase-shifted, transparent features; and

said phase-shifting mask being utilized with off-axis illumination such that radiation passes through said mask onto said material.

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17. The computer program product of claim ⁶16, wherein said at least one feature further includes semi-transparent features.

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18. The computer program product of claim ⁶16, wherein said at least one feature further includes opaque features.

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19. A computer program product for controlling a computer comprising a recording medium readable by the computer, means recorded on the recording medium for directing the computer to generate at least one file corresponding to a mask capable of transferring an image onto a material, said generation of said file comprising the step of:

generating a phase-shifting mask comprising at least two unattenuated, halftoned, phase-shift features having a width w , said features separated by a width substantially equal to w ,

wherein said mask provides an image including 0th diffraction order and $\pm 1^{\text{st}}$ diffraction orders, when illuminated.

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~~20~~. A computer program product for controlling a computer comprising a recording medium readable by the computer, means recorded on the recording medium for directing the computer to generate at least one file corresponding to a mask capable of transferring an image onto a material, said generation of said file comprising the step of:

generating a phase-shifting mask comprising at least two halftoned, phase-shifted, transparent features having a width w , said features separated by a width substantially equal to w ,

wherein said mask provides an image including 0th diffraction order and $\pm 1^{\text{st}}$ diffraction orders, when illuminated.

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~~21~~. The computer program of claim ~~20~~, wherein said at least two features further include semi-transparent features.

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~~22~~. The computer program of claim ~~20~~, wherein said at least two features further include opaque features.

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~~23~~. The computer program of claim ~~19~~, wherein a focus-exposure process window for maintaining a predetermined resist line-width sizing of said mask is substantially common to an attenuated, phase-shift mask of a similar pitch.

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~~24~~. The computer program of claim ~~20~~, wherein a focus-exposure process window for maintaining a predetermined resist line-width sizing of said mask is substantially common to an attenuated, phase-shift mask of a similar pitch.